

ESL Consulting Services

Accelerating and Growing the Return on Your ESL Design Investments

Why Design at the Electronic System Level?

The world's most successful electronics product and device manufacturers are rapidly moving to design at the Electronic System Level (ESL). They are finding this is the only way to manage burgeoning complexity of electronic hardware and embedded software in today's products. Most of these companies are choosing CoWare's tools and methods to implement their move to ESL design. CoWare provides ESL tools in four main areas:

- **CoWare® Platform Architect and CoWare® Model Designer**—the leading SystemC-based toolset for design, simulation and analysis of complex SoC architectures;
- **CoWare® Virtual Platform**—fast, executable simulation of the device hardware and the environment it evolves in that addresses the limitations of the software execution environment currently available to development teams;
- **CoWare® Processor Designer**—for automated embedded processor design and software development tool generation;
- **CoWare® Signal Processing Designer**—the most comprehensive solution that bridges the gap from DSP algorithm exploration to implementation into hardware and software.

CoWare provides comprehensive services to support successful adoption and use in all four areas.

Why Use CoWare's ESL Consulting Services?

Moving to ESL is not a trivial undertaking. Similar to any new technology, there needs to be investment in new tools, new design flows, new design skills, all require training of your engineers. Without expert help, there will be much trial and error, which can significantly delay achievement and reduce the effectiveness of the ESL design flow. For example, combining the required use model and

SERVICE TYPES	BUSINESS BENEFITS
Methodology Consulting	Benefit from best practices from over 60 successful ESL design projects
Training	Accelerate proficiency in ESL languages, methodologies and tools
IP Modeling and Integration	Jumpstart your ESL IP model portfolio

correct level of abstraction so that platforms execute with optimal speed is critical to productivity. By using CoWare's ESL Consulting Services, you can tap into the experience gained through more than 60 successful customer projects. CoWare's service delivery experts will help to significantly accelerate your move to ESL, bringing earlier and larger return on your investment.

“CoWare’s Consulting Services team was very responsive to our needs. They have a “can do” attitude that gave us the confidence the project would be successful right from the start. Not only was it completed to our satisfaction but their professional approach made the process a very pleasant experience for our team.”

James Clough
Platform Software Developer
RadioFrame Networks

CoWare's services approach is different in that our emphasis is on knowledge transfer. We want your design team to become fully self-sufficient quickly.

Methodology Consulting

Objective: We use our expertise and experience to assess your needs and plan your ESL flow. Project success is dependent on both creating the platform correctly and creating the components in the most productive order.

Process: We work with your design and methodology staff using structured interview techniques for assessment of your current flow, intended ESL design flow, IP modeling and training needs.

Result: CoWare will provide a full report on ESL needs, readiness and design flow recommendations including:

- ESL Migration Plan / Timeline
- Dependencies
- Success/Failure Criteria
- Recommendation for first ESL project success

Training

Objective: Get your design team productive with ESL languages, methodologies and tools, as quickly and efficiently as possible.

Language Training

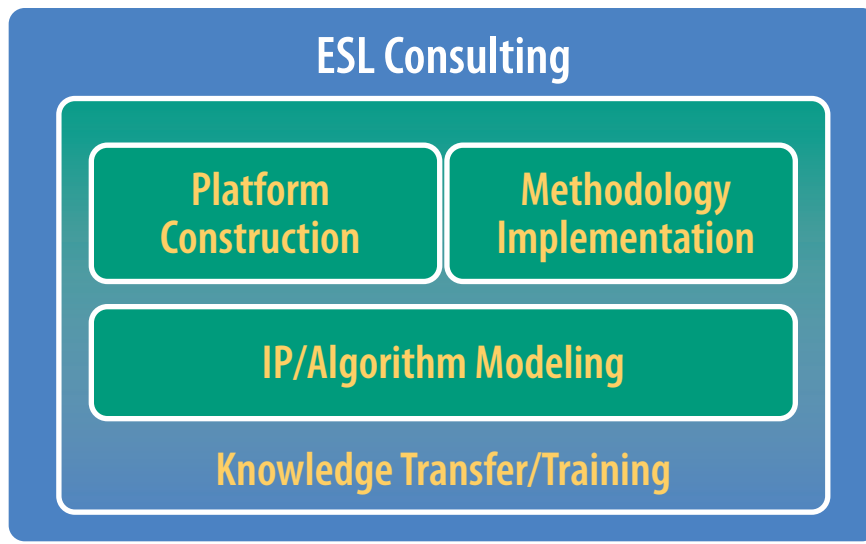
- SystemC, LISA

Tools Training

- CoWare Platform Architect
- CoWare Model Designer
- CoWare Virtual Platform
- CoWare Processor Designer
- CoWare Signal Processing Designer

Methodology Training

- Top-Down Design
- Platform-Based Design
- ESL Verification
- “Easy Platform Model” packages for self-paced training



Training courses can be held at your site, or at CoWare sites worldwide. Training events can also be held at major conferences.

Why use CoWare IP Modeling and Integration Services?

Creating the “first” platform in a time frame of relevance can be very challenging. Having seasoned experts leading the development efforts so less experienced engineers learn rapidly while creating the appropriate models is only prudent. The expert lead approach ensures the models will be created correctly the first time and allows our customers to create derivatives rapidly.

IP Modeling & Integration

Objective: Creating ESL models for processors, interconnect and peripherals to make your IP needs available in your ESL flow.

CoWare can provide turnkey modeling services, or help you to create and maintain your own models, using CoWare’s IP modeling tools. CoWare’s policy is to model using widely-accepted standards wherever possible, such as SystemC, TLM, OCP and SPIRIT.

We can help model your internal (captive), or licensable IP. In the latter case, CoWare can also operate as an OEM channel for distribution and support.

Processor Modeling Services

- Integrating existing ISS to create transaction-level “Processor Support Packages” (PSPs) for CoWare’s SystemC tools
- Using CoWare Processor Designer for creating PSPs including the ISS models
- Using CoWare Processor Designer for creating the software tool chain, including assembler, linker, C-compiler and debugger
- High-speed processor modeling services
- Processor architecture design support services

Interconnect Modeling Services

SoC on-chip bus and network-on-chip (NoC) interconnect protocols have an increasing impact on the performance of your designs. CoWare can provide fast, flexible transaction-level bus libraries for popular commercial interconnects such as AMBA, AXI and Sonics SMART IP, as part of the CoWare Model Library. CoWare has also worked with many customers to capture their own custom bus and NoC specifications as a CoWare Bus Library. CoWare has tools to make capturing fast, flexible models of custom specifications, and upgrading and maintaining the resultant models much quicker and easier. CoWare will work with you to capture these models, then train you on the tools so you can be completely self-reliant.

Bus Library Capabilities

- Fast transaction-level models in SystemC
- Fully flexible for easy architectural exploration
- Fully instrumented for interconnect analysis
- Automatic creation of TLM to RTL (pin-accurate) transactors
- Full RTL generators can also be provided

Peripheral Modeling Services

CoWare can also help capture SystemC transaction-level models for your peripherals. We will work with partner companies to automate the creation of fast SystemC simulation models from legacy Verilog or VHDL.

Platform Modeling Services

CoWare has worked with many customers to capture and assemble system-level IP into complete SoC platform models. We help customers use our tools to attain optimal platform architectures, while retaining the flexibility to create many derivative platforms quickly.

Worldwide Presence

CoWare has services personnel in many locations worldwide, and also has a large network of services delivery partners. We have sales offices in the US, Europe, Japan and Asia Pacific. For a complete listing with contact information, visit www.CoWare.com.

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